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### Remarks

Claims 1 – 22 are pending in the application.

Claims 7 – 12 are rejected under 35 U.S.C. §112, ¶1, as failing to comply with the enablement requirement.

Claims 13 – 16 and 19 – 21 are rejected under 35 U.S.C. §112, ¶2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 7, 14 – 15, and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho, U.S. Patent No. 5,408,618 (hereinafter “Aho”) in view of Wu, U.S. Patent No. 5,185,860 (hereinafter “Wu”) in further view of Devlin, U.S. Patent No. 7,050,404 (hereinafter “Devlin”).

Claims 2, 8 and, 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Wu in further view of Devlin in even further view of Nataranjan, U.S. Patent No. 6,539,427 (hereinafter “Nataranjan”).

Claims 3 – 6, 9 – 12, and 19 – 22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Wu in further view of Devlin in further view of Bertin, U.S. Patent No. 6,400,681 (hereinafter “Bertin”).

Claims 13 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Habusha, U.S. Patent No. 6,477,590 (hereinafter “Habusha”) in further view of Wu, in further view of Devlin.

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or are simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being made only with an intent to change the literal scope of such

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claim in the most minimal way, i.e., simply to avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, because a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewritten to include the limitations of claims that previously depended from it. Thus, by such rewriting, no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

#### **Statement of Substance of Interview**

This is intended as a full and complete response to the Interview Summary concerning an interview held on October 20, 2008, between the Examiner Redentor M. Pasia, the Examiner's Supervisor Aung Moe and Eamon J. Wall and Yelena Morozova, Applicant's representatives.

Applicant's representatives thank the Examiner and the Examiner's Supervisor for the courtesies extended during the interview and for taking time out of the busy schedules to speak with Applicant's representatives.

Applicant's representatives acknowledge the summary of the Substance of Interview in the Interview Summary mailed on November 24, 2008. Applicant believes that the summary provided in the Interview Summary accurately reflects the telephone interview between the Examiner, Examiner's Supervisor, and Applicant's representatives. Furthermore, per the interview discussion, Applicant has amended the independent claims to recite "an established communication path in the network."

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**Rejections Under 35 U.S.C. §112****Claims 7 – 12**

Claims 7 – 12 are rejected under 35 U.S.C. §112, ¶1, as failing to comply with the enablement requirement. The rejection is traversed.

Applicant has cancelled claims 7 – 12. Accordingly, the rejection is moot. The Examiner is respectfully requested to withdraw the rejection.

**Claims 13 – 16 and 19 – 21**

Claims 13 – 16 and 19 – 21 are rejected under 35 U.S.C. §112, ¶2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The rejection is traversed.

Claim 15 has been cancelled. Claims 13, 14, 16, and 19 – 21 have been amended. Applicant believes that the proposed amendments address all the issues raised by the Examiner under 35 U.S.C. §112, ¶2. Accordingly, the Examiner is respectfully requested to withdraw the rejection.

**Rejection Under 35 U.S.C. §103****Claims 1, 7, 14 – 15, and 17**

Claims 1, 7, 14 – 15, and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Wu in further view of Devlin. The rejection is traversed.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2141. Establishing a *prima facie* case of obviousness begins with first resolving the factual inquiries of Graham v. John Deere Co. 383 U.S. 1 (1966). The factual inquiries are as follows:

- (A) determining the scope and content of the prior art;
- (B) ascertaining the differences between the claimed invention and the prior art;
- (C) resolving the level of ordinary skill in the art; and
- (D) considering any objective indicia of nonobviousness.

Once the Graham factual inquiries are resolved, the Examiner must determine whether the claimed invention would have been obvious to one of ordinary skill in the art. The key to supporting a rejection under 35 U.S.C. §103 is the clear articulation of the

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reasons why the claimed invention would have been obvious. The analysis supporting such a rejection must be explicit. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F. 3d 977, 988 (CA Fed. 2006), cited with approval in KSR Int'l Co. v. Teleflex, Inc., 126 S. Ct. 2965 (2006); see also MPEP §2141.

The Office Action does not establish a *prima facie* case of obviousness, because the suggested combination of Aho, Wu, and Devlin fails to teach or suggest all the claim limitations. In particular, neither the references, nor their combinations disclose

analyzing the local network information received to map an established communication path in the network;  
responsive to the local network information received and the established communication path mapped in the analyzing step, selecting a next network element of the established communication path for querying,

as recited in independent claim 1 (emphasis added).

According to claim 1, a network includes a plurality of network elements. Network elements are commonly known in the art and include routers, switches, bridges, splitters, splicers, client devices, and the like. Such network elements are interconnected by links. A plurality of communication links coupled to each other via appropriate network elements and connecting a source network element to a destination network element form a communication path from the source network element to the destination element. The method of claim 1 operates iteratively from a network element to another network element along an established communication path to identify those network elements that form the established communication path and extracts from those network elements local (to the respective network elements) network information such as topology information, connection information, and a performance information.

Each of the cited reference fails to disclose such a method. Rather, the cited references merely disclose general topology discovery processes. More specifically, Aho discloses an automatic configuration mechanism for monitoring and responding to changes in a local area network (LAN). Such a mechanism has three functions. First, it is used by nodes in a network to obtain configuration information from other nodes. Second, it is used by nodes to provide their configuration information to other nodes.

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Third, it is used by nodes to respond to other nodes seeking configuration information. However, Aho does not disclose mapping the established communication paths. While Aho discloses that nodes are being discovered, such discovery is not performed in any particular order, and certainly not along the established communication paths.

Furthermore, though Aho describes a path list 843, such a path list does not include established communication paths. Rather, the path list 843 includes topology information (e.g., LAN address, bridge ID, ring ID, number of hops, and maximum frame size) regarding all possible paths between two nodes. Such topology information is used by connection managers to locate and establish a best path between the two nodes (see col. 12, lines 36 – 43; col. 12, line 67 – col. 13, line 7). Nowhere does Aho disclose mapping the best path after it has been established. Accordingly, Aho fails to disclose mapping an established communication path and querying network elements along the established communication path.

Wu discloses a computer network node discovery system that provides for discovering network nodes connected to a network. Some nodes of the network are designated discovery agents and are configured to convey knowledge of the nodes existing in the network. The system queries the discovery agents to obtain lists of nodes known to the discovery agents. The nodes on the lists are also queried to determine if such nodes are discovery agents and if additional lists should be obtained. The querying process is periodically repeated to obtain information about the nodes that are not always active. In this manner, nodes of the network are discovered. However, discovering nodes in a network is different from mapping an established communication path, iteratively selecting and querying network elements along such a path. Wu fails to disclose the latter.

Devlin discloses a method and a system for determining connectivity of switches in a computer network. The connectivity of switches is determined by determining all possible port pairings, determining a score for each port, and selecting the port having the highest score. Devlin further discloses a process of discovering network elements that uses a “two-wave look ahead” process. In particular, this process involves two partially overlapping wave processes, speculative and definitive. During the speculative wave process, a known network device is interrogated to learn existence of other connected

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network elements, which are in turn interrogated to learn about even more connected elements. The definitive wave process uses the information gathered by the speculative wave to determine network topology starting with one LAN and progressing to others.

However, determining a network topology map is not the same as mapping an established communication path. The network topology map typically includes mapping of the network devices and their connections. However, the network topology map is not tied to a particular established communication path. Rather, the network topology map is used to establish communication paths. While Devlin describes discovery of networking devices and determination of the network topology map, Devlin is silent about mapping the established communication paths and selecting network elements for querying along the established communication path.

Accordingly, neither the cited references, nor their combination disclose analyzing the local network information received to map an established communication path in the network; responsive to the local network information received and the established communication path mapped in the analyzing step, selecting a next network element of the established communication path for querying, as recited in independent claim 1. Therefore, Applicant's independent claim 1 is allowable over the combination of Aho, Wu, and Devlin under 35 U.S.C. §103(a).

Independent claim 17 recites limitations similar to those recited in independent claim 1 and discussed above. Therefore, independent claim 17 is allowable under 35 U.S.C. §103(a) over the combination of Aho, Wu, and Devlin. Furthermore, because all of the dependent claims depending from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable under 35 U.S.C. §103(a) over the combination of Aho, Wu, and Devlin.

The Examiner is respectfully requested to withdraw the rejection.

**Claims 2 – 6, 8 – 12, and 18 – 22**

Claims 2, 8, and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Wu in further view of Devlin in even further view of Natarajan. Claims 3 – 6, 9 – 12, and 19 – 22 are rejected under 35 U.S.C. §103(a) as being

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unpatentable over Aho in view of Wu in further view of Devlin in further view of Bertin. The rejections are traversed.

Claims 2 – 6, and 18 – 22 are depended respectively from claims 1 and 17, and thus include all the limitations of claims 1 and 17, while reciting additional limitations. Accordingly, each such dependent claim is also allowable under 35 U.S.C. §103(a) over Aho in view of Wu in further view of Devlin. Because the Office Action provides no arguments that Nataranjan, Bertin, or their combination supply that what is missing from the combination of Aho, Wu, and Devlin a *prima facie* case of obviousness has not been established. Accordingly, these dependent claims are also allowable under 35 U.S.C. §103(a).

The Examiner is respectfully requested to withdraw the rejections.

#### Claims 13 and 16

Claims 13 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Aho in view of Habusha in further view of Wu, in further view of Devlin. The rejection is traversed.

The Office Action failed to establish a *prima facie* case of obviousness, because Aho, Habusha, Wu, and Devlin, alone or in combination, fail to teach or suggest all the claim limitations.

Independent claim 13 recites limitations similar to those recited in independent claims 1. As such, for at least the reasons discussed above, Aho, Wu, and Devlin, alone or in combination do not teach or suggest at least:

analyzing the routing information received to map the new established communication path in the network;  
selecting a next network element to query along the new established communication path,

as recited in independent claim 13. Habusha, similarly, fails to disclose these limitations.

Habusha is generally directed to a method and system for managing transfer of packets between nodes in a message queuing system. The portions of Habusha cited by the Examiner merely disclose that two nodes in a network may exchange messages including connection parameters. However, Habusha does not disclose mapping an established communication path of a network or selecting network elements for querying

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along such an established communication path. Mere message exchanging between two nodes is simply not the same as mapping the established communication path, even if such messages include connection information.

Therefore, Applicant's independent claim 13 is allowable over the combination of Aho, Habusha, Wu, and Devlin under 35 U.S.C. §103(a). Furthermore, because all of the dependent claims that depend from the independent claims include all the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable under 35 U.S.C. §103(a) over the combination of Aho, Habusha, Wu, and Devlin.

The Examiner is respectfully requested to withdraw the rejection.

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It is respectfully submitted that the Office Action's rejections have been overcome and that this application is now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

Dated: 12/5/08  
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